

# TERWILLIGER FIRE

## SUPPRESSION REPAIR PLAN SEPTEMBER 11<sup>ST</sup>, 2018

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Randy Harbick Fire Management Officer, McKenzie River Ranger District	Date
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Darren Cross District Ranger, McKenzie River Ranger District	Date
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Tracy Beck Forest Supervisor, Willamette National Forest	Date
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Prepared By: Jonathan Erickson Lead Resource Advisor	Date
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## INTRODUCTION

### BACKGROUND

The Terwilliger Fire was detected on August 19th. The fire quickly grew beyond the capacity of the initial attack resources due to the dry forest conditions. As the fire spread and spotted into the Three Sisters Wilderness, steep rugged terrain, dense vegetation, and unreliable access made containment impossible. A Type 3 Incident Management Team was ordered and then transitioned to a Type 2 team immediately.

The Terwilliger Fire is currently 10,800 acres and is burning on the west and east sides of cougar reservoir. The eastern portion of the fire is burning in the Three Sisters Wilderness between Sawtooth Ridge and the Rebel Creek. To the west, the fire is comprised of two incidents. To the north, the fire is established between Rider Creek and Rush Creek. To the South, the fire is burning between Cougar Crossing and Blue Creek. Containment strategies included the construction of containment line features, falling dead standing trees, removing lower limbs, small trees and underbrush, and aerial support. As the fire continues to spread both towards mixed ownership land to the west and further into Three Sisters Wilderness the combination of challenging terrain and dense mixed conifer vegetation make this fire resistant to containment. As such, this is expected to be a long term event, and will continue to burn until significant moisture eliminates fire growth potential.

### PURPOSE

**The purpose of this repair plan is to:**

- 1. Summarize suppression activities that have occurred.**
- 2. Identify and prioritize the needs for suppression repair.**
- 3. Describe methods, estimated costs and timelines for repair activities.**

An itemized list of repair needs by division is included as a table in this report and will be made available to divisions.

### JURISDICTION

This repair plan pertains only to Willamette National Forest lands. There are several areas of private and state lands that will be repaired under full agreement and cost share with the Oregon Department of Forestry, ~~however it generally does not address any State or will address contingency line rehabilitation on private lands that may be within the fire perimeter.~~

## OBJECTIVES

The objective of this suppression repair plan is to mitigate adverse effects to resources resulting from fire suppression activities (FSM 2523.1). Surface water/erosion, resource protection, maintenance of site productivity, and repair of damaged infrastructure are the focus of this work.

## RESPONSIBILITIES

Development of the requirements for this suppression repair plan is the combined effort of the Incident Management Team (IMT) and the Forest Service Lead Resource Advisor. The IMT will be responsible for initiating the following repair activities. The Forest Service Resource Advisors will provide guidance in the field during repair, as well as monitoring, and document the quality of the repair efforts and on National Forest lands. The Lead Read will be responsible for updating the repair plan and approving completed repair actions based on information gathered by operations and field READS.

Rehabilitation beyond damage done during the fire suppression and associated activities, as identified during the combined efforts of the Resource Advisors and IMT, will be the responsibility of the Willamette National Forest and will not be addressed in this plan.

It is the responsibility of the IMT and the Willamette National Forest to develop a transition plan to allow completion of repair and rehabilitation once the IMT or area teams have disbanded. An organizational structure will be developed and staffed by district, forest, or regional personnel to accomplish repair and rehabilitation needs and to track accomplishments. The district will identify a Lead READ and a Lead Field READ who will provide overall coordination with the IMT, Forest, District and Fireline Resource Advisors. Specialists from the District or elsewhere will work directly with the Lead and Lead Field READ's to ensure that priority resource concerns are adequately addressed during repair.

## RESOURCE INFORMATION AND RECORDS

The Lead READ will work with the Planning Section to develop site-specific repair recommendations and provide daily addendums to the plan, if needed. Specific information about roads, constructed fire lines, safety zones, drop points, water sources, and other suppression facilities will be inventoried by the IMT. The IMT will work with the Lead READ to maintain a complete record (maps) and inventory of suppression actions and facilities during the fire. The preferred method of record keeping is ArcGIS online Collector. The IMT will additionally maintain a complete record of suppression repair treatments and provide the information to the home unit prior to their demobilization.

The IMT will provide the home unit with electronic copies of all GIS data developed for this fire, including fire perimeters, fire control lines (interior and exterior to the fire perimeter), drop point locations, safety zone locations, staging areas, water sources, structures, and helibases.

## **REPAIR GUIDELINES**

The following Repair Guidelines address the specific on the ground actions that will be implemented on the Rebel Horse Creek Fire Complex. These guidelines will be attached to the Incident Action Plans developed by the IMT. A spreadsheet detailing all required actions will be attached along with a cost spreadsheet.

### **SUPPRESSION REPAIR**

The following appendices relate to repair items and related specific actions unique to each fire. Specific auxiliary information on each item can be found in the spreadsheet of Appendix A – Suppression Repair Plan Cost Summary. Additional repair needs can be found in Appendix B – Additional Repair Prescriptions. A cost analysis can be found in Appendix C – Suppression Repair Cost Summary. General repair prescriptions for each item can be found in Appendix D – General Suppression Repair Prescriptions. Repair Maps can be found in Appendix E, and a list of specific items that have already been repaired can be found in Appendix F – Completed Repair Work.

## **APPENDIX A – REPAIR ITEMS BY DIVISION**

**Table 1. Estimated repair costs and equipment needs for roads and engineering including access roads used in the suppression of the Terwilliger Fire.**

**\*XX ID for roads in the table below is the road number.**

**Table 2. Fire Suppression Line Features - Repair items for Division Delta and Alpha.**  
**\*Reference Object ID for tracking.**

<b>OBJECT ID *</b>	<b>Feature Category (Line Type)</b>	<b>Collector Name</b>	<b>Comments</b>	<b>Repair Status</b>	<b>Repair Comments</b>	<b>Shape Length</b>	<b>Equipment Needed</b>
9	Access or Improved Road	Joe Doerr	Heavy brushing on north side of road. Brush piled on south side.	Repair Needed	<Null>	1062	
21	Access or Improved Road	Joe Doerr	<Null>	Repair Needed	One large snag fallen downhill into ditch that needs excavator to cleanout. Has been chipped- 9/5. Still some logs and rounds to clean out of ditch.	1248	
22	Access or Improved Road	Joe Doerr	<Null>	Repair Needed	Has been chipped 9/5. Some suppression logs/slash still in ditches in places.	1379	
29	Access or Improved Road	Hogansen	access to private contingency line, has been snagged and brushed,	Unknown	snags pushed into ditch, needs drainage cleaned and logs moved to a disposal area	1727	



			light dozer work		or side cast		
35	Access or Improved Road	J Hogansen	heavy use road for access	Repair Needed	1986, access road, blade roll, clean downed snags out of ditch line	6174	
1	Completed Dozer Line	Dasher	Rd 133, level 2 road to remain open(JH 9-7-18) 90% existing rocked road, southern portion (150') new dozed line	Repair Needed	Drivable water bars to flagging , berm at flagged road edge where dozed line to private begins, chip brush	1168	
4	Completed Dozer Line	Dasher	short dozed line that ties into private, culvert damaged where it ties into the 1985 road	Repair Needed	machine water bar and block.	111	
5	Completed Dozer Line	Dasher	short dozed line on private	Repair Needed	Need to validate repair prescription	101	
10	Completed Dozer Line	Dasher	steeper dozed line, small to medium excavator	Unknown	pull back berms, slash, seed, and water bar.	364	

11	Completed Dozer Line	Rob Mickey	Short dozer line. Small or medium sized excavator needed to rehab.	Repair Needed	Pull back berms, seed, slash and water bar.	162	
12	Completed Dozer Line	Dasher	about 200 feet new dozed line then ties into 276 road.	Repair Needed	new dozed line could use small excavator. some steep portions need to evaluate. 276 road water bar and block, will be used in Boone timber sale.	1505	
13	Completed Dozer Line	Dasher	Landline, not dozer.	Repair Needed	Water bar, slash, and seed	280	
14	Completed Dozer Line	Dasher	Dozed line, upper half is existing road, road 120. lower half is new dozer line.	Repair Needed	Probably accessible with medium excavator. Water bar, slash, and seed, close entrance.	609	
15	Completed Dozer Line	Dasher	steep pre-existing road bed opened by dozer.	Repair Needed	Water bar and block with medium excavator	421	

17	Completed Dozer Line	Dasher	Dozed line, steep in spots	Repair Needed	Water bar, slash, and seed. medium to small excavator but would need further evaluation	611	
18	Completed Dozer Line	Dozed line	short, steep dozed line	Unknown	hand water bar, slash, seed, and pull back berms	80	
19	Completed Dozer Line	Rob Mickey	Completed dozer line on preexisting road template.	Repair Needed	Pull slash and berm. Small or medium excavator needed.	74	
30	Completed Dozer Line	Rob Mickey	Short piece of dozer line to ridge top. Hand line takes off half way up dozer line.	Repair Needed	Pull back berms, seed and slash. Small or medium sized excavator needed.	132	
36	Completed Dozer Line	McCoy	<Null>	Repair Needed	Basic repairs plus add tank traps up top by 1993 rd	288	
2	Completed Hand Line	Dasher	landline, first 500` fairly steep then flattens out	Repair Needed	hand water bar, pull hose lay	834	
3	Completed Hand Line	Dasher	steep hand line that ties into reservoir	Repair Needed	Water bar and pull hose lay	196	

16	Completed Hand Line	Dasher	Direct hand line ends prior to 1986 road	Unknown	Water bar by hand, pull back berms or cup trench	397	
23	Completed Hand Line	Rob Mickey	<Null>	Repair Needed	Hand line. Pull slash, water bar on steeper portions, pull berms. Approximately 500 feet on old road template and another 500 feet of 0% slope.	923	
28	Completed Hand Line	Hogansen	from rd 1900 to South Fork McKenzie	Unknown	pull hose, water bars, pole slash and seed/straw	778	
31	Completed Hand Line	Rob Mickey	Mostly 70%-80% slope. Top half extremely rocky.	Repair Needed	On steep rocky portions, re-contour slope and slash. On other steep portions, water bar, pull back berms and slash.	1737	

**Table 3. Fire Suppression Point Features - Repair items for Division Delta and Alpha.**  
**\*Line ID for roads in the table below is the road number, not the collector ID number.X**

<b>OBJECT ID *</b>	<b>Feature Category (Point Type)</b>	<b>Collector Name</b>	<b>Label</b>	<b>Comments</b>	<b>Repair Status</b>	<b>Repair Comments</b>	<b>Equipment Needed</b>
1	Other	Joe Doerr	Trees in ditch	Several trees fallen down hill in ditch.	Repair Needed	Remove logs from ditch. Need equipment.	
2	Other	Hogansen	burned guard rail	burned guard rail post	Repair Needed	<Null>	
9	Other	Hogansen	pump site with fold a tank	fold a tank, pump, pump kit and hose cash	Unknown	remove equipment	
10	Other	<Null>	Cashed Tires	cash of tires along road side	Unknown	Tires cashed - haul out with trailer	
5	Safety Zone	Rob Mickey	The dirt pile.	Timbered knob bulldozed flat to create safety zone.	Unknown	Soil spread out close to road edge. Pull back and re-pile soil, slash and seed. Maintain access to preexisting road template for future timber sale.	

3	Unimproved Landing Area	Masher	log landing	Needs repair prescription	Unknown	<Null>	
6	Unimproved Landing Area	Dasher	Landing /Safety Zone	created an opening for safety zone. leveled off small mound.	Unknown	slash, seed, and create drainage	
7	Unimproved Landing Area	Dasher	log landing, rock pit	old rock pit, dozed open	Unknown	Re-contour, pull back dozed fill	
8	Unimproved Landing Area	Rob Mickey	Log Landing	Landing that is used for log decks and processing. Also used for staging / drop point.	Repair Needed	Scarify, slash and seed.	

**Table 4. Fire Suppression Point Features - Repair items for Division Pappa.**

OBJECT ID	Incident Name	Feature Category (Point Type)	Collector Name	Label	Comments	Repair Status	Repair Comments	Equipment Needed	GlobalID
25	Terwilliger	Other	Foster	Timber Sale Boundary	Timber sale boundary, could be used as strategic fuel break, LPTS 190	Unknown	<Null>		{4a6d3e36-522e-4bfb-8561-4ef984dbf6a3}

					boundary				
26	Terwilliger	Drop Point	Foster	Drop point 75	2 fold-a-tank's	Repair Needed	Landing created, approx. 100x300 ft. Will require repair. Edge of timber sale unit. Hand line continues down from landing. 1 possible water bar needed at edge of landing/dozer line. Approx 75ft.		{f84fae75-3a45-44cc-b6f8-3c237518d908}
27	Terwilliger	Other	Foster	Firewood deck >10cords	<Null>	Repair Needed	Ask local timber dept. what they want done		{b1f092cb-9641-43aa-9be6-b8c0fd62be8d}
28	Terwilliger	Water Tank	Foster	Fold a tank x2	<Null>	Repair Needed	Remove tanksX2, all gear, and garbage		{56c747ed-02ed-45e1-ab50-a48f7dcfa833}
29	Terwilliger	Water Tank	Foster	Fold a tank x2	<Null>	Repair Needed	<Null>		{767ee651-867a-4e46-9a0c-2abdc13e496f}

30	Terwilliger	Drop Point	Foster	DP 70	Landing created. Approx 150x75ft.	Repair Needed	<Null>		{7e686b6b-ec0b-48ec-85a2-5db4eccd649b}
31	Terwilliger	Water Tank	Foster	Fold a tank x2	<Null>	Repair Needed	<Null>		{49fb9b3c-7c04-4c56-80ad-e35e45161fe4}
56	Terwilliger	Other	Foster	Firewood and slash	<Null>	Repair Needed	Felling operations snag dropped across trailhead. Needs bucked stack and slash chipped/dispensed of		{c7cdebd0-21e0-452d-934f-d4f1dd9b470e}
57	Terwilliger	Other	Foster	Single Bridge	Line around structure. Hose lay from rd and pump possible.	Repair Needed	<Null>		{b12305f7-6292-499b-a6b8-8967f51a88b4}
58	Terwilliger	Other	Foster	Footbridge	Cleared around bridge approximately 5 ft on either side. Minimal disturbance. Recommend no repair needed.	Repair Needed	Remove hoselay after use		{4c92fd99-527e-44e8-801f-0ec3440c9eeb}
59	Terwilliger	Other	Foster	Footbridge	Bridge in good condition. Hand rail broken. Clean	Other - See Comme	If hoselay and sprinklers		{3324b7d6-f9f3-4fc5-8e2e-



					line on either side. Recommend no repair.	nts	installed, remove and rip down flagging.		59da6f188a93}
60	Terwilliger	Other	Foster	3 Footbridges	3 older footbridges. In state of decay. Hand line around both. Minimal disturbance. No repair recommended.	Other - See Comments	If hose lay and pump installed remove both. Remove flagging.		{df169579-2f17-40df-8875-98a4712070a3}
61	Terwilliger	Other	McCoy	P Line	<Null>	Repair Needed	P line: pull flagging, camo trail by road for 100ft, put cut rounds back in line with logs, scatter debris over trail		{a6f18eb8-503d-4179-94f0-7889d3d05ee1}
62	Terwilliger	Other	Foster	Large Footbridge	Pump and sprinkler setups. 3 gas cans and trash from berms and absorbent pads. Remove all trash and equipment from site.	Repair Needed	<Null>		{50fcd24f-9780-451d-b2c0-5b36e3b0f78b}
64	Terwilliger	Pump	McCoy	Pump	<Null>	Repair Needed	Basic spot checks, keep petrol out of water		{df8f3db6-9b36-426c-b219-319a9ad2e546}

68	Terwilliger	Unimproved Landing Area	Foster	Cleared landing	Significant slash and soft soil. Approximately 50x100ft Landing/turn around.	Repair Needed	Mix of chipping and even dispersion. Rehab of soil and landing footprint.		{2ae5fbc0-f1d4-4f2a-a8fe-e7dccb7c0f83}
69	Terwilliger	Helispot	Foster	Helispot 90	Brushing and general clearing activities. Speak with ODF on turn back standards.	Other - See Comments	<Null>		{5882fd92-5b7d-453d-ad13-2b76283a5e53}
70	Terwilliger	Other	McCoy	<Null>	<Null>	Repair Needed	Trailhead board, permit box, and Wilderness boundary sign were all taken down and need reinstalled. Saddle trail sign needs new post near 1993 rd. and sign reinstalled		{1f147eee-a9b4-4bac-9184-13a6fc4f663e}
71	Terwilliger	Pump	McCoy	Pump	<Null>	Repair Needed	Pull pump, hose, all gear and trash		{a30a0361-be4a-4cd8-b7ed-17d6708eabaf}

72	Terwilliger	Other	McCoy	Upper French Pete Trailhead board and signs	<Null>	Repair Needed	French Pete Trailhead board and Wilderness boundary sign were removed and replaced with closure notice and flagging. Remove flagging and reinstall board and sign.	{b15671f4-1873-4141-94ea-9db19b121928}
76	Terwilliger	Other	McCoy	East Fork Footbridge - lower	<Null>	Repair Needed	Pull hose, scatter debris, collect and remove trash. camo stumps, remove or scatter log rounds.	{7639571e-bf59-4b2c-9d2e-37326895f8c4}
77	Terwilliger	Other	McCoy	Trailhead	<Null>	Repair Needed	Lower East Fork Trailhead and Wilderness Boundary sign and parking lot signs were removed, need	{3ff752da-97b0-4a85-86d9-df997ce0a064}

							reinstall. Also, remove special		
78	Terwilliger	Other	McCoy	STZ	<Null>	Repair Needed	Pull special treatment flagging along 411rd.		{18268d08-e56c-4d61-863a-8eec14700620}
81	Terwilliger	Other	Foster	Trailhead area	Firewood and rotten slash from hazard tree mitigation	Repair Needed	Remove slash and rounds from roadway. Disperse evenly via chipping or transport.		{1752b658-9500-4f0c-84bc-c9b918e1d4f9}
84	Terwilliger	Other	McCoy	Danger tree flagging	<Null>	Repair Needed	Gather danger tree flagging on east fork trail		{fffb92ec-5497-49ce-82a8-ed0b6065f35b}

**Table 5. Fire Suppression Line Features - Repair items for Division Pappa.**

OBJECT ID	Incident Name	Label	Feature Category (Line Type)	Collector Name	Comments	Repair Status	Repair Comments	Equipment Needed	Shape Length	GlobalID
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37	Terwilliger	Dozer Line	Completed Dozer Line	Foster	Through treated stand. Ends near stand density Change. Hand line continues on from fold-a-tank site.	Repair Needed	This is stored dozer line. Leave berm and slash on the sides, install water bars where necessary, seed line with grass seed. Leave in condition where minimal work is needed to reopen in the future.		790	{9ee139ad-31b4-4c81-a932-4e08421b16d9}
38	Terwilliger	road as completed line	Access or Improved Road	Foster	Road used for normal fire equipment travel, Ingress/egress for do 70 &	Other - See Comments	Have Road READs look at need to repair.		9064	{6d8d3478-51b4-4940-9c8e-5952b71038c9}

					75					
39	Terwilliger	Dozer Line	Completed Dozer Line	Foster	Short dozer line through treated timber sale unit.	Repair Needed	This is stored dozer line. Leave berm and slash on the sides, install water bars where necessary, seed line with grass seed. Leave in condition where minimal work is needed to reopen in the future.		211	{532399b3-e1f8-4f34-b72b-04c2f9e70058}

40	Terwilliger	Hand Line	Completed Hand Line	Foster	Dirty hand line crosses 2 streams	Repair Needed	This is stored hand line. Leave berm and slash on the sides, install water bars where necessary, seed line with grass seed. Leave in condition where minimal work is needed to reopen in the future.		855	{8e1533dc-4275-4aa4-9b02-c432b82f2e91}
111	Terwilliger	Road as Completed Line	Road as Completed Line	Foster	Snags dropped and dozer used to push out of the road way into ditch and fill	Repair Needed	Road needs to be bladed and rolled, remove logs from		26690	{b30d49d8-cbd2-439f-8bea-259fe1ae318f}

					slope shoulder		ditch and fill slope bank, designat e a disposal area to move suitable disposa area, designat e disposal area.			
130	Terwillig er	Hand Line	Comple ted Hand Line	Foster	Handline from dp75 tied into dozer line. Through sale unit already harvested and extracted. May wish to leave as tactical fire line. 45-90% slope.	Other - See Comme nts	This is stored hand line. Leave berm and slash on the sides, install water bars where necessar y, seed line with grass seed. Leave in conditio n where		287	{98d32c2b -eda9- 4988- b074- 91282c667 ale}



							minimal work is needed to reopen in the future.			
131	Terwilliger	Dozer Line	Completed Dozer Line	Foster	Significant slash in berms.	Other - See Comments	This is stored dozer line. Leave berm and slash on the sides, install water bars where necessary, seed line with grass seed. Leave in condition where minimal work is needed to reopen in the future.		244	{c97cf659-f1e1-4dd4-b1d6-ff5114ecf19d}

132	Terwilliger	Road as completed line	Road as Completed Line	Foster	Appears as temp road to bottom of timber sale. Dozer has bladed road to King rd. Berms and significant slash present. Firewood potential. Recommend thin along break. Discuss repair needs on private with ODF, if any.	Repair Needed	This is stored line. Leave berm and slash on the sides, install water bars where necessary, seed line with grass seed. Leave in condition where minimal work is needed to reopen in the future.		691	{bd7d0550-5d08-422d-a8b4-4efa9a876f77}
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133	Terwilliger	Dozer Line	Completed Dozer Line	Foster	Light blading by dozer on temp road. Significant impact where temp rd corners; dozer line punched approximately 500ft to handline. Temp road continues to King rd.	Repair Needed	Private land turn back standards need to be discussed with ODF. Berms and slash present.		1901	{75854d74-64f0-441a-ac39-325c4e50abd2}
134	Terwilliger	Hand Line	Completed Hand Line	Foster	No impact to stream channel. Only 1-2 water bars needed.	Repair Needed	Need to see if we are repairing private land		226	{759488c3-9e42-4b96-b5a8-cdab73138c6f}
135	Terwilliger	Access road	Access or Improved Road	Foster	Primary access to contingency line.	Other - See Comments	Speak with ODF on turn back standards.		1137	{ba8312ee-64bf-48f5-ae02-4843a6ece755}

136	Terwilliger	Road as completed line	Road as Completed Line	Foster	Significant slash in berms. High berms and soft road surface. Large cobbles and small boulders present as well. Possibly old temp road mixed with new dozer line cut.	Other - See Comments	Contact ODF on turn back standards		651	{bbc38542-05e5-4af0-94d8-3bbd2bce5a87}
137	Terwilliger	Access Road	Access or Improved Road	Foster	Contact ODF on turn back standards.	Other - See Comments	No obvious impact observed		246	{30c5b3ea-40d0-4da9-8a96-51582d77a295}
138	Terwilliger	Road as completed line	Road as Completed Line	Foster	Brushed alongside rd. Significant slash remains.	Repair Needed	Chipping and even dispersal. Pull special treatment zone flagging 200ft		908	{5ccdc3f5-3559-4331-8fd6-8f7eb427240b}

							west of HC road junction.			
139	Terwilliger	Road as completed line	Road as Completed Line	Foster	Significant slash present	Repair Needed	Chipping and even dispersal . pull special treatment zone flagging across from HC campground entrance		770	{c634d5d8-93ed-412d-96b0-caf71ea2d075}
140	Terwilliger	Road as completed line	Road as Completed Line	Foster	Slash present from brushing activities.	Repair Needed	Chipping and even dispersal		454	{635d7290-9eb6-4832-94b6-00d51953544e}
141	Terwilliger	<Null>	Completed Dozer Line	McCo y	<Null>	Repair Needed	Basic repairs plus add tank traps up top by 1993 rd		288	{156d5d7c-4de5-41a5-83bb-5205d4c76a41}

142	Terwilliger	P Line	Other	McCo y	<Null>	Repair Needed	P line: pull flagging, camo trail by road for 100ft, put cut rounds back in line with logs, scatter debris over trail		264	{8e8062b5 -c295- 4dda-b20f- fdb9254ca ed9}
143	Terwilliger	P Line	Other	McCo y	<Null>	Repair Needed	P line: pull flagging, camo trail by road for 100ft, put cut rounds back in line with logs, scatter debris over trail		410	{9016f9ed -3ca4- 4d03- ae61- bda2f7f5b 492}
144	Terwilliger	P Line	Other	McCo y	<Null>	Repair Needed	P line: pull flagging, camo trail by road for 100ft, put cut		644	{a499eb41 -efc2-4fb5- 8802- 337e6aad8 59d}

							rounds back in line with logs, scatter debris over trail			
145	Terwilliger	P Line	Unknown	McCoy	<Null>	Repair Needed	P line: pull flagging, camo trail by road for 100ft, put cut rounds back in line with logs, scatter debris over trail		304	{b5246885-81c4-4872-95f4-25639d934ba4}
146	Terwilliger	P Line	Other	McCoy	<Null>	Repair Needed	P line: pull flagging, camo trail by road for 100ft, put cut rounds back in line with logs, scatter debris over trail		220	{648deba9-f7de-4290-9405-9c6a28c95096}

152	Terwilliger	<Null>	Other	McCo y	<Null>	Repair Needed	P line: pull flagging, camo trail by road for 100ft, put cut rounds back in line with logs, scatter debris over trail		435	{9f69c90b-415f-47e5-a258-a14a62993103}
153	Terwilliger	<Null>	Other	McCo y	<Null>	Repair Needed	P line: pull flagging, camo trail by road for 100ft, put cut rounds back in line with logs, scatter debris over trail		783	{92a6a5ab-f9fb-4335-a195-bfbd33d7a83f}

**Table 6. Fire Suppression Point Features - Repair items for Division Zulu.**

<b>OBJEC TID</b>	<b>Incident Name</b>	<b>Featur e Catego ry (Point</b>	<b>Collect or Name</b>	<b>Label</b>	<b>Comments</b>	<b>Repair Status</b>	<b>Repair Comment s</b>	<b>GlobalID</b>
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		Type)						
4	terwilliger	Helispot	mackay	the legendary lemon helispot	<Null>	Repair Needed	dozer out large area in thinned unit. 10 merch trees. need excavator to pull in berm and bring trees to landing. Material brought in has scotch broom. Will need future weed treatments .	{8325c625-7c40-4452-b31e-cc8c35798ccd}
5	Terwilliger	Helispot	mackay	helispot	<Null>	Repair Needed	<Null>	{e84e837d-8996-4f24-b1af-9628e38e0afd}
8	Terwilliger	Pump	mackay	pump	2 pumps	Repair Needed	<Null>	{81d7702e-5cbf-4f21-8a0f-3c044b462b6f}
9	Terwilliger	Water Tank	mackay	Water Tank	<Null>	Repair Needed	<Null>	{37a85bc5-dfbb-4a44-bcde-1c31c0dc6ddc}

10	Terwilliger	Drop Point	mackay	drop point 10	<Null>	Repair Needed	<Null>	{6531cbcc-06b0-4c65-a0e2-4c8fc45444c0}
12	Terwilliger	Water Source	mackay	Water source	<Null>	Repair Needed	<Null>	{4ef1f94c-4f55-4e1e-a8d6-5d9300de17b7}
13	Terwilliger	Other	mackay	pushout/parking	20'x60'	Repair Needed	<Null>	{572dcd5f-9037-425a-9b9d-81af28ec7c12}
14	Terwilliger	Pump	mackay	6 or 7 pumps	<Null>	Completed - Inspected	pumps removed 9/8/18	{c71b3b30-13cb-44ec-8c85-711fd4e4c6df}
15	Terwilliger	Water Tank	mackay	3 tanks	<Null>	Completed - Inspected	tanks and pumps removed 9/8/18	{560ad289-0ee6-458a-9770-3b37d1bf47a1}
16	Terwilliger	Other	Joe Doerr	Dirt storage	pile of dirt on pull off on bend of road was removed (many truck loads) for helispot construction. A second pile across road was removed	Repair Needed	Consult road engineer about dirt pile. Needs to be subsoiled and seeded	{42446cf1-b019-4412-b285-f7f1fd97f16f}

					also			
17	Terwilliger	Other	mackay	destroyed tank trap	<Null>	Repair Needed	rebuild berm and tank trap and close road. consult engineer	{b701c314-376a-4b95-8285-9fd16b05ed5a}
18	Terwilliger	Pump	Joe Doerr	Pump	Honda Trash Pump RMK-1222-16	Repair Needed	<Null>	{ca7a9a0e-89c2-4113-a20d-956bffe10ef6}
19	Terwilliger	Other	Joe Doerr	Burned bridge	Burned by Fire	Repair Needed	discuss with engineering	{614096c2-bebc-445f-8f1f-b1e2f31a2479}
20	Terwilliger	Other	Joe Doerr	Push Out	Small push outs with dozer at end of road	Repair Needed	Pull back berm and slash with excavator. Could also do this work with handcrew while repairing hand lines	{822c69eb-aa73-4bdb-baf6-63cd5a1ec4f8}

21	terwilliger	Other	Joe Doerr	wood bridge	Currently dozing open and brushing Rd 225 on each side of bridge	No Repair Needed	<Null>	{befc2538-8b25-419e-a18f-2165c958c09b}
22	Terwilliger	Other	Joe Doerr	Helispot	Merch logs fallen for clearing	Repair Needed	<Null>	{5104bf44-5a77-4925-a315-cee53a2eabfb}
23	Terwilliger	Other	Joe Doerr	Handline	Short handline from 19 to river. Entered as a point in collector	Repair Needed	<Null>	{7bd5020b-b1c3-4845-b2bb-45e70f6d5b5f}
32	<Null>	Pump	Joe Doerr	<Null>	1 Mark 3 Pump -	Repair Needed	Installed fish screen. Get back to district.	{773ac8a9-4e98-4328-8829-b4b7d1a8b3dd}
33	Terwilliger	Other	Joe Doerr	Red Diamond Campground	<Null>	Repair Needed	Pull berms back around trees. Flush stump saplings cut.	{7b408143-6af0-47a7-9474-2157279c899f}
34	Terwilliger	Other	Joe Doerr	Spot fire	<Null>	No Repair Needed	Very minimal hand lining	{a1fae5ba-c94f-48ff-b2bb-2fe2327bf32c}

35	Terwilliger	Other	Joe Doerr	Hard Rock Camp Ground	Porta-potties. Burned around by fire.	Repair Needed	<Null>	{8e19b6fa-9940-4b63-95cc-8a2adb56cc02}
36	Terwilliger	Other	Joe Doerr	French Pete	French Pete Campground fire suppression work and site prep	Repair Needed	<Null>	{557c43a0-1592-4dcd-9c75-909f1dc1ba1b}
37	Terwilliger	Other	Joe Doerr	Push out	Push out along road	Repair Needed	<Null>	{327a3e4d-e4be-4793-b841-c3233fa73000}
38	Terwilliger	Other	Joe Doerr	Excavated Spot	Excavated spot for material on helispot	Repair Needed	Engineer can look at this. May use for chip spreading spot. Good location to pile firewood for public use.	{af0b1b5c-fcfe-481f-a66f-4f3c22607256}
39	terwilliger	Other	Joe Doerr	<Null>	Seep on uphill side of road. Dozer May have blocked ditch. Need to check out	Repair Needed	<Null>	{0c0b930e-811a-4bd6-99e3-580e22057864}

40	Terwilliger	Pump	Joe Doerr	Pump	1 Honda Pump and one Mark 3 pump	Repair Needed	<Null>	{ae5f4769-c012-40f2-bc1f-674db4b6d121}
41	Terwilliger	Other	R Foster	Campsite refuse	Tires, canopy, plastic tubs and other misc equipment and materials. Left near active fire line	Other - See Comments	<Null>	{8085e722-9f47-4f8b-bf0d-efe2e6182ca7}
43	Terwilliger	Helispot	mackay	helispot	<Null>	No Repair Needed	<Null>	{2d8244a4-019d-49bb-8d16-5835deea1087}
44	Terwilliger	Helispot	mackay	helispot	<Null>	No Repair Needed	<Null>	{e2d8ff70-8db2-4877-b9a3-bd8c1ab689e4}
45	Terwilliger	Value at Risk	Joe Doerr	value at risk	Sensitive Area on uphill side with beargrass	Other - See Comments	Don't chip into the uphill beargrass side of road here	{56dc16c0-339d-4766-a430-8e053c0d1f43}
46	Terwilliger	Value at Risk	Joe Doerr	value at risk	Sensitive area. Don't chip on uphill side here	Other - See Comments	<Null>	{b8e57ed9-7bc4-49b8-bdc9-68dd5ca753f9}

47	Terwilliger	Value at Risk	Joe Doerr	value at risk	Don't drag brush/limbs into beargrass meadow.	Other - See Comments	<Null>	{e6835a7a-0118-4335-9996-cc51f86b953e}
49	Terwilliger	Value at Risk	Joe Doerr	French Pete Trail outhouse	Outhouse was wrapped	Repair Needed	Outhouse unwrapped 9/6, pick up equipment, clean up trees fallen in parking space, clean brush laying into roadway (minor), low stump road to trailhead. Several danger trees at outhouse need assessment	{7572e983-3de0-4ff9-8591-4913816f5ef4}
50	Terwilliger	Pump	Joe Doerr	pump	Honda Trash NWK-1222-69. Has large fish screen	Repair Needed	Pull equipment when done	{af86ecf4-f048-4498-9fd1-e448ac9f67cd}
53	Terwilliger	Pump	mackay	Pump	odf engine pump site, large fish screen	Repair Needed	make sure everything collected	{4142e96a-0385-4389-9588-e9e8def9e318}

63	Terwilliger	Pump	Joe Doerr	pump	Mark 3 with large fish screen. Number 020221	Repair Needed	<Null>	{1688b3abd1a0-4284-b66b-381019e0bac4}
67	Terwilliger	Other	Hogansen	Disposal Site	previously used as disposal site, good location to place firewood	Other - See Comments	none	{658d7167-cef8-4742-bccc-052b581942ff}
80	Terwilliger	Other	pushout	<Null>	20x60 pushout	Repair Needed	<Null>	{b5ddc9ab-3688-42ac-b203-8c1b36892e1f}
82	Terwilliger	Other	Hogansen	dozed push out	material pushed out of the road	Repair Needed	pull back berm and disperse WOOD material	{10c7abaf-f31a-4045-a557-9367fec2ab90}
83	Terwilliger	Other	Hogansen	Hose Cash	Hose Cash to be back hauled on 1980204	Repair Needed	Back Haul supplies	{a0315c98-4f60-4642-a062-784cba768129}

**Table 7. Fire Suppression Zulu Features - Repair items for Division Zulu.**

OBJECTID	Incident Name	Collector Name	Feature Category (Line Type)	Label	Comments	Repair Status	Repair Comments	Shape Length	Equipment Needed	GlobalID
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5	Terwilliger	mackay	Completed Hand Line	hand line	<Null>	Repair Needed	<Null>	29.579524		{b7e653e1-166d-4577-89ac-a06ee685b90e}
6	Terwilliger	mackay	Completed Hand Line	hand line	<Null>	Repair Needed	<Null>	142.728804		{0f950cb1-1cb1-4e8a-9691-5f5e26844a7e}
7	Terwilliger	mackay	Completed Hand Line	hand line	<Null>	Repair Needed	<Null>	29.422447		{61f2ac28-afc2-4686-8a6d-e8d320806d56}
8	Terwilliger	mackay	Completed Hand Line	hand line	<Null>	Repair Needed	<Null>	24.410486		{aeced511-8e2a-4b07-b6f7-6c2ad8372b2d}
9	Terwilliger	mackay	Completed Hand Line	hand line	<Null>	Repair Needed	<Null>	20.075215		{648abffb-ec9d-4885-a447-1e7cfff77642}
10	terwilliger	mackay	Road as Completed Line	road as completed line	brushing	Repair Needed	chip or scatter (avoid river and wetlands)	9820.349652		{384938df-315b-4ac2-ad21-8ba6c7b09dbf}

16	Terwilliger	mackay	Completed Hand Line	hand line	<Null>	Repair Needed	<Null>	145.534624		{d214892b-f84f-4413-995d-a2f3600f31d1}
17	Terwilliger	mackay	Completed Hand Line	hand line	<Null>	Repair Needed	<Null>	371.905059		{18da2d3b-e23f-4cf7-98c5-ab27844e3b01}
18	Terwilliger	mackay	Other	access to handline	access to handline	Repair Needed	<Null>	478.174562		{c8dab2ce-3972-494f-9367-febb05829541}
19	Terwilliger	mackay	Completed Hand Line	hand line	<Null>	Repair Needed	<Null>	60.123362		{ae6b01c3-e9cd-423e-932a-c0400c4a886d}
21	Terwilliger	mackay	Access or Improved Road	access or improved road	<Null>	Repair Needed	the dozer bladed on the road	617.324968		{e2e1c3fe-2bc5-4dbb-adb0-33cb85eb37be}
22	Terwilliger	mackay	Completed Dozer Line	Dozer Line	pushouts along dozerline	Repair Needed	need excavator	80.786436		{6edbef54-ee66-4c7e-866c-62353191c32b}

23	Terwilliger	Joe Doerr	Access or Improved Road	Access Road	masticated	Repair Needed	<Null>	2982.44 8545		{454e4855-2928-4c87-82e7-a0dcfd18af46}
24	Terwilliger	mackay	Completed Hand Line	hand line	Standard hand line repair - see plan	Repair Needed	<Null>	1003.89 2682		{1c1f84fb-0c07-4b31-b06e-4e748a0c939e}
25	terwilliger	mackay	Completed Dozer Line	<Null>	348 rd	Repair Needed	<Null>	400.605 744		{429e6192-dbc0-4b07-9bfa-744b78edb5ea}
26	Terwilliger	Joe Doerr	Completed Hand Line	Hand Line	<Null>	Repair Needed	<Null>	60.6789 77		{44d19813-7fdf-43bd-81fa-e698a9327098}
27	Terwilliger	Joe Doerr	Completed Hand Line	hand line	<Null>	Repair Needed	<Null>	22.8713 84		{727bedd2-54e4-458e-9b93-fad642c2bf3f}
28	Terwilliger	Joe Doerr	Completed Hand Line	hand line	<Null>	Repair Needed	<Null>	70.4539 29		{71312150-04b8-4e4b-a74b-c8c38e21b6a0}

29	Terwilliger	Joe Doerr	Completed Hand Line	hand line	<Null>	Repair Needed	<Null>	14.188647		{1907afa6-527e-46ec-9805-547cb5ab304d}
30	Terwilliger	Joe Doerr	Completed Hand Line	Hand line	Satellite reception was kinda of poor due to smoke I think. Hand line locations off a little. All lines connected together	Repair Needed	<Null>	288.808852		{2b92edc4-7079-4f81-ac13-04087275cf45}
31	Terwilliger	Joe Doerr	Completed Hand Line	Hand line	<Null>	Repair Needed	<Null>	68.805106		{8eebbf07-1c3a-4458-b388-5ba49038f3a6}
32	<Null>	Joe Doerr	Completed Hand Line	<Null>	<Null>	Repair Needed	<Null>	21.94198		{1ce3df3a-f798-4d7d-b068-f0ded0091a87}

33	Terwilliger	Joe Doerr	Access or Improved Road	access road	Rd 225. Heavily dozed surface with some push outs.	Repair Needed	Consult engineer. Heavy dozer work.	1423.42 1508		{46958e82-5123-4cd8-b324-829127a95656}
41	Terwilliger	Joe Doerr	Completed Hand Line	hand line	<Null>	Repair Needed	<Null>	109.309 405		{c2fe0af0-f846-453c-a51c-34010db9e538}
42	Terwilliger	Joe Doerr	Access or Improved Road	Access or improved road	<Null>	Repair Needed	Heavily dozed to open road. Consult engineer.	1205.55 9818		{44051b44-c1ab-4b47-b12b-5bcbfadd e4e6}
43	Terwilliger	Joe Doerr	Completed Dozer Line	Dozer Line	<Null>	Repair Needed	<Null>	74.1619 42		{6f6e7cb0-126b-4b32-8f6d-19102b0556c4}
45	Terwilliger	Foster	Access or Improved Road	access road	Potential for salvage minor	Repair Needed	Slash disposal needed	697.346 712		{4dbb059a-f9d1-47eb-b0d9-ddac1787a812}
46	Terwilliger	Joe Doerr	Access or Improved Road	access road	Brushed road	Repair Needed	<Null>	3805.74 1363		{7390e3ae-2e3e-4d71-8e83-027d64d2}

										bec6}
47	Terwilliger	Joe Doerr	Access or Improved Road	access road	Brushed road	Repair Needed	<Null>	1243.33 264		{8ef02e36-95c6-4ccb-8736-3f6bab8c4164}
48	Terwilliger	Joe Doerr	Access or Improved Road	access road	Brushed road	Repair Needed	<Null>	8318.74 3732		{aabc12c8-3bd1-45a5-bdd7-ff3be7e21951}
49	Terwilliger	mackay	Completed Dozer Line	Dozer Line	<Null>	Repair Needed	<Null>	90.5054 19		{ba2b41f8-bb6e-4b19-b2ed-75ef8d1b4195}
50	Terwilliger	mackay	Completed Hand Line	Hand Line	<Null>	Repair Needed	<Null>	916.812 811		{4bebbe53-213c-4019-a986-13e535cc1f7c}
51	terwilliger	mackay	Access or Improved Road	<Null>	<Null>	Repair Needed	<Null>	476.600 042		{6a0bbdba-a5fc-40fa-94ad-60b2bd5dc7}
53	Terwilliger	Joe Doerr	Completed Hand Line	hand line	<Null>	Repair Needed	<Null>	596.338 188		{f8500ddc-98d7-4c18-b36e-

										3d2664f82ecf}
54	Terwilliger	<Null>	Road as Completed Line	road as completed line	<Null>	Repair Needed	<Null>	708.844959		{ae571daa-f997-4f5c-8eb1-89df8433c6a8}
55	Terwilliger	Joe Doerr	Road as Completed Line	road as completed line	<Null>	Repair Needed	Road partially brushed . Not complete. 8/31	1113.366845		{e4130e2a-2675-4150-8622-f7aa261115b2}
56	Terwilliger	Joe Doerr	Road as Completed Line	road as completed line	Some brushing . Not complete.	Repair Needed	<Null>	1407.729408		{b0b34d21-9a66-4654-b98c-42d2415fad2b}
57	Terwilliger	Joe Doerr	Access or Improved Road	access road	Dozer opened road. Continues beyond mapped line	Repair Needed	<Null>	2634.907696		{20bd0448-7b1f-42af-84dc-ecaa796aaf92}
58	terwilliger	mackay	Road as Completed Line	<Null>	brushing and handline along old road	Repair Needed	<Null>	62.687384		{009fbd74-1967-43ed-9858-064fec4a3766}
59	Terwilliger	mackay	Road as Completed Line	road as completed line	brushed along old road	Repair Needed	<Null>	34.37377		{825ad433-8985-4f9e-ba37-

										462f016beafb}
60	terwilliger	mackay	Road as Completed Line	<Null>	handline cut and brushed along road	Repair Needed	<Null>	242.6121		{5251e5f6-8eee-4ea0-8911-a1096044cb9f}
61	Terwilliger	mackay	Road as Completed Line	road as completed line	brushed	Repair Needed	<Null>	199.175743		{796d3cc7-19b2-4da2-b163-589229338970}
62	Terwilliger	mackay	Road as Completed Line	road as completed line	brushing and handline	Repair Needed	<Null>	102.250219		{1b7e04aa-dca1-4584-84bd-5cfca228d88a}
63	Terwilliger	mackay	Road as Completed Line	road as completed line	brushed	Repair Needed	<Null>	35.692063		{58b31cac-d997-4a69-87b9-5362be7d1cce}
64	Terwilliger	mackay	Completed Hand Line	hand line	<Null>	Repair Needed	<Null>	41.112764		{b32d867d-d957-42ab-a97f-83ee1055eec7}
65	Terwilliger	mackay	Road as Completed Line	road as completed line	handline and brushing	Repair Needed	<Null>	158.556373		{7f69c2b9-2b4f-43b8-9ec0-



										b6a78f43b781}
66	Terwilliger	mackay	Road as Completed Line	road as completed line	brushed and handline	Repair Needed	<Null>	21.44725		{6142f68b-8a0a-40ad-a7fb-9be183586e10}
67	Terwilliger	mackay	Road as Completed Line	road as completed line	brushed	Repair Needed	<Null>	563.127753		{0da9b544-8be2-4a08-b212-3b3ee4a38828}
69	Terwilliger	Joe Doerr	Access or Improved Road	access road	Masticated	Repair Needed	<Null>	1287.651158		{9a9eef65-b1d6-4e8e-afe7-376b82a9fd1f}
70	Terwilliger	Joe Doerr	Access or Improved Road	access road	Brushed with large amounts of slash	Repair Needed	<Null>	4714.192663		{ab8c2084-3232-40c3-9b48-fd518bc9a295}
71	Terwilliger	Joe Doerr	Access or Improved Road	access road	Brushed with heavy slash along green side	Repair Needed	<Null>	4800.558748		{98d3de57-1667-4bec-be68-13db0cdaa29c}
72	Terwilliger	Joe Doerr	Access or Improved Road	access road	Brushed with heavy slash	Repair Needed	<Null>	964.529208		{b9f4053c-b06b-4f08-8f49-624c26ea

										0127}
73	Terwilliger	Foster	Fire Break Planned or Incomplete	fire break	Road brushed and prepped as containment line. Will need chipping.	Repair Needed	Chipping or slash and firewood removal needed.	324.74625		{4bd42fa7-4dd4-4cbf-ac11-8b903c2356d5}
74	Terwilliger	Foster	Road as Completed Line	<Null>	Road brushed and prepped as primary containment line. Will need chipping. Small firewood potential . Recommend any sound wood <6" be chipped and dispersed away from	Repair Needed	Slash needs to be chipped and firewood placed in accessible location not obstructing other resources such as forest signs and culverts .	9497.096259		{1d213243-6fb5-4295-847a-88eb8cac7e1b}

					road downslope. Any material >6" be placed in visible location for local firewood use.					
75	Terwilliger	Foster	Completed Hand Line	hand line	Line goes to river's edge.	Repair Needed	Hand line construction pulling back berms (possibly) and some water bars needed. Handline appears to be a	83.7156 21		{026e4165-b842-48d9-a164-7bc4117f4001}

							trail to river. Hose lays and sprinklers will need removal. Spread slash evenly.			
76	Terwilliger	R Foster	Management Action Point	Slash and debris management	Roadway in need of significant slash disposal. Some minor value for merchantable timber. Most value in firewood. Significant material down across river from both sides. Significant repair	Repair Needed	Chippers able to handle large diameter burnt slash needed. Place to stage firewood and or possible commercial firewood potential. Recommend Fire salvage evaluation to	3202.46 3037		{ce7ec49d-059e-4af3-8b55-fe4b1ba1817f}

					needed to repair aesthetic value.		restore corridor safety			
77	Terwilliger	Foster	Management Action Point	Slash and Hazard Trees	Slash and hazard trees.	Repair Needed	Slash disposal and hazard tree mitigation needed.	300.117804		{cc567974-10b2-44e1-9d55-f2f816717006}
78	Terwilliger	R Foster	Other	salvage potential	Significant tree Mortality along roadway. Hazardous situation for public. Recommend district	Repair Needed	Consult Timber specialist	513.282669		{133ccd31-484e-4135-94f3-d018edd587ee}

					personnel evaluate for salvage.					
79	Terwilliger	Foster	Other	access road	Primary ingress and egress road. Evaluation needed by engineering.	Other - See Comments	<Null>	40827.63591		{38fc9380-9f11-4cf1-af48-2d4ff3c44948}
80	Terwilliger	mackay	Access or Improved Road	access road	mastication along 1927	Repair Needed	May have destroyed 1 or more mile post signs according to equipment boss. Engineer need to	12447.8971		{7826cf53-2729-4bf0-a406-5edc1d92735b}

							replace ?-JD 9/4			
81	Terwilliger	Joe Doerr	Access or Improved Road	access road	<Null>	Repair Needed	Dozed open road	2044.27 9224		{c1430591-c43d-4319-84bb-1050a0fa46fc}
90	Terwilliger	Joe Doerr	Completed Hand Line	hand line	<Null>	Repair Needed	Steep	356.795 983		{3668f64e-14fc-472f-b1d4-fb482471e71d}
91	Terwilliger	Joe Doerr	Road as Completed Line	Road as line	<Null>	Repair Needed	Minimal suppression work on road.	1491.17 7809		{aa395392-37ad-44e7-9caf-0775572fd65a}
92	Terwilliger	Joe Doerr	Road as Completed Line	Road as line	Minimal work	Repair Needed	Maybe grade	626.366 283		{f4f9072a-0b83-4727-b2a1-6e71c069614f}
93	Terwilliger	Joe Doerr	Access or Improved Road	access or improved road	Masticated and Fire line	Repair Needed	<Null>	1026.41 8694		{d9fa7404-c1a9-4d64-ba2c-8793a5260cda}

94	Terwilliger	Joe Doerr	Road as Completed Line	Road as Line	Not masticated but fire line.	Repair Needed	Check with engineer - Probably no repair needed. Do final check when fire suppression is done.	371.175 439		{f022a6c7-03a6-49d2-9d97-a478773a5c7c}
95	Terwilliger	Joe Doerr	Completed Hand Line	hand line	<Null>	Repair Needed	<Null>	119.253 253		{56c4d994-b2ad-4ddf-81fc-bbe05405bae4}
98	Terwilliger	Joe Doerr	Completed Hand Line	hand line	<Null>	Repair Needed	<Null>	248.171 823		{49c96bef-5f94-4754-a192-1215664f5657}
99	Terwilliger	Joe Doerr	Completed Hand Line	hand line	<Null>	Repair Needed	Where handline meets road is a culvert. Clean out any dirt/debris handline	161.874 653		{3204ca29-af33-478d-b801-7245eb7e5623}



							knocked into ditch			
100	Terwilliger	Joe Doerr	Road as Completed Line	road as completed line	Handline scratched down middle of rock surface road. Some brushing at top by fire.	Repair Needed	Clean suppression slash out ditch and lop and scatter downhill. Minor priority would be to pull bigger berms back into handline-not essential.	2008.12 7112		{6e7f6cd-dcee-4797-86aa-7b79364a42d5}

101	<Null>	Joe Doerr	Road as Completed Line	<Null>	Dug handline down middle of rock surface road. Some brushing at upper end.	Repair Needed	Handline deeper and steeper than on 204. Will need berms pulled in and some water outlets. Clean suppression debris or of ditch with hand crew and lop and scatter downhill.	1932.00 6754		{35acaebf-fd2d-442c-b96c-b189b19f4699}
102	Terwilliger	Joe Doerr	Completed Hand Line	hand line	Very steep	Repair Needed	<Null>	376.486 977		{4efa7e29-1138-4aab-a238-22ca7caa036}

105	Terwilliger	Joe Doerr	Completed Hand Line	hand line	<Null>	Repair Needed	Repair handline that goes to river. Some upper parts burnt over will not need repair since the fire burned out the handline.	126.594165		{3655a2a4-a115-4d6d-afeb-51e714780ca2}
106	Terwilliger	Joe Doerr	Completed Hand Line	hand line	<Null>	Repair Needed	<Null>	157.754471		{928de057-ace2-48ca-975a-ea77f77bd3d8}
107	Terwilliger	Joe Doerr	Completed Hand Line	hand line	<Null>	Repair Needed	<Null>	273.106596		{f778c908-4eb3-4286-b372-6f50bbd8ba3a}
108	Terwilliger	Joe Doerr	Completed Hand Line	hand line	<Null>	Repair Needed	<Null>	45.991602		{15cf600e-1b47-4f6d-9663-5252e5aa49a8}

109	Terwilliger	mackay	Completed Hand Line	hand line	<Null>	Repair Needed	<Null>	31.104629		{af88259a-af9c-4342-9877-2a7c51cc54bc}
110	Terwilliger	mackay	Completed Hand Line	hand line	<Null>	Repair Needed	<Null>	34.765151		{57cd7716-16c0-43bb-ba10-59462d3deb89}
120	Terwilliger	<Null>	Completed Hand Line	hand line	<Null>	Repair Needed	<Null>	339.367598		{83ad7fcf-6cef-4589-ab45-d28daa8b8c50}
121	Terwilliger	mackay	Completed Hand Line	hand line	<Null>	Repair Needed	<Null>	353.410985		{a572dfa0-b22f-402f-8d57-c4e38bbe f2f3}
122	<Null>	mackay	Completed Hand Line	<Null>	<Null>	Repair Needed	<Null>	24.435366		{ec2bb8e0-141e-4707-b8a9-6663b67fde93}
124	Terwilliger	Hogan sen	Access or Improved Road	1980-231 access, marked escape route	marked escape, moderate traffic	Repair Needed	blade and roll	6547.959014		{44b92da7-da3b-4796-89cf-1133989aed18}

125	terwilliger	Hogansen	Access or Improved Road	<Null>	heavy use access road	Repair Needed	blade and roll, under contract?	24219.3304		{c8fceece-3dd5-4d0f-b90a-5876df475005}
126	Terwilliger	Hogansen	Access or Improved Road	access road	1980-230, access road, escape route, moderate use as access marked as escape route	Repair Needed	blade and roll	543.372741		{eecb49b5-089f-43a8-8256-780393a31095}
127	Terwilliger	hogan sen	Access or Improved Road	1980-330, road used as access	berm pushed in and dozed	Repair Needed	no berm, non drivable water bars	407.494204		{7f1434cc-b517-427b-8336-fc0c53a38099}
148	Terwilliger	Hogansen	Completed Dozer Line	<Null>	Dozed tracks to a pushed over snag	Repair Needed	water bars and pull slash	200.338991		{1fed0a80-5133-48ab-8667-192b315c3630}
149	Terwilliger	Hogansen	Road as Completed Line	<Null>	1927-100 Road as Completed Line	Repair Needed	Road needs bleeding and rolling, slash chipping	2410.323415		{672529bf-745e-4bbe-9f32-992e160818d6}

							g and logs/sounds pulled from ditch,			
150	Terwilliger	Hogansen	Road as Completed Line	<Null>	1927-140, Road as Completed Line	Repair Needed	Chip slash and pull logs/sounds from ditch	2715.08 8263		{cdba982a-0d6c-4241-8575-a835cd301cc7}
151	Terwilliger	Hogansen	Road as Completed Line	<Null>	Hand line down the middle of road, break up berm and scatter slash	Repair Needed	Break up berm and scatter slash	8157.77 3541		{db73959d-bc2a-477c-89ce-e5ca08830574}
154	Terwilliger	McCoy	Other	<Null>	<Null>	Repair Needed	Collect closure signage posted along Wilderness Trails	22007.2 1294		{f07aabc8-142b-43b2-a3dd-7b05b1f12d71}

## APPENDIX B – ADDITIONAL REPAIR PRESCRIPTIONS

### REQUIRED ACTIONS IN ALL FIRE AREAS –

- Remove all closure signs from wilderness and non-wilderness areas once wilderness is reopened. This will require overnight stays in the wilderness and can be completed by fire or recreation resources.
  - **Costs Estimate**
    - **1 Squad = \$1825/day**
    - **5 Days of work**
      - **5 x \$1825 = \$9,125**

### TOILET PUMPING – COST REMAINING \$

- Pump all toilets used by fire personnel on FS Road 19 corridor and other areas.
  - **Cost Estimate**
    - **Average \$1000/toilet**
      - **19 Toilets at \$1000 = \$19,000**

### LOG LANDING CLEANUP – COST REMAINING \$

- Clean up log landings at... This work will include chunking burn piles and smoothing ruts. There is an estimated X days of work with an excavator.
  - **Cost Estimate**
    - **Average \$1925/day + \$1000 mobilization fee**
      -

### TREE BRIDGE HAZARD DIVISION ZULU – COST REMAINING \$7,000

- This feature is a tree that was intentionally fallen across the South Fork McKenzie to gain access for IA. The South Fork is a kayaking run featured in local guide books. This tree is a significant hazard to recreational boaters. A winch truck will be needed to remove it.
  - **Cost Estimate**
    - **Winch Truck for 1 day = \$7,000**

### DAMAGED GATE REPAIR – COST REMAINING \$

- - **Cost Estimate**
    - **\$2,000/gate x 2 gates = \$4,000**

## SNAGGING AND HAZARD TREE MITIGATION – COST REMAINING \$

Across all divisions - retain dominate Douglas fir if possible unless, there is a mature five needle pine without fire damage next to it. In this instance, cut the Douglas fir and retain the five needle pine. Douglas firs and pines can often survive low to moderate fire activity. **Other thin barked species (hemlock, white fir, spruce, and lodge pole) should be prioritized for removal over Douglas fir and five needle pines because they often do not survive heat from fire.**

- Division D – Assess and fell all snags and imminent hazard trees along the FS Road 415. When possible, retain merchantable timber based on the specifications described on page 6 of this document. Protect vented cement fords from metal tracked equipment.
- Division D – FS Road 1985115 needs interior snagging. Interior depth to be determined by fire personnel and safety.
- Division A – 1985260 assess for snagging and hazard mitigation to facilitate repair. The 1985260 is currently pushed in and the road was extended with dozer line.
- Division D/A – FS Road 1900 needs snagging and hazard mitigation. When possible, retain all merchantable timber based on the specifications described on page 6 of this document. Resource advisors recommend hauling all material to FS Road 1900/1980 landing site. Pre-cut rounds that are solid should be hauled to nearby campgrounds. Stumps should be flush cut.
- Division Z – FS Road 1993 assess for snagging and hazard mitigation. Emergency authorization has been approved for felling operations in the McLennan Inventoried Roadless Area along the north edge of FS Road 1993.

## APPENDIX C – SUPPRESSION REPAIR COST SUMMARY

	Division D	Division A	Division Z	Division P
Tree Bridge Hazard				
Road Repair				
Road Repair Mobilization				
Closure sign removal				
Toilet Pumping				
Log Landing Cleanup				
Damaged Gates				
Total				

**\*\*\*Costs do not include IMT or other overhead expenditures or mobilization fees.**

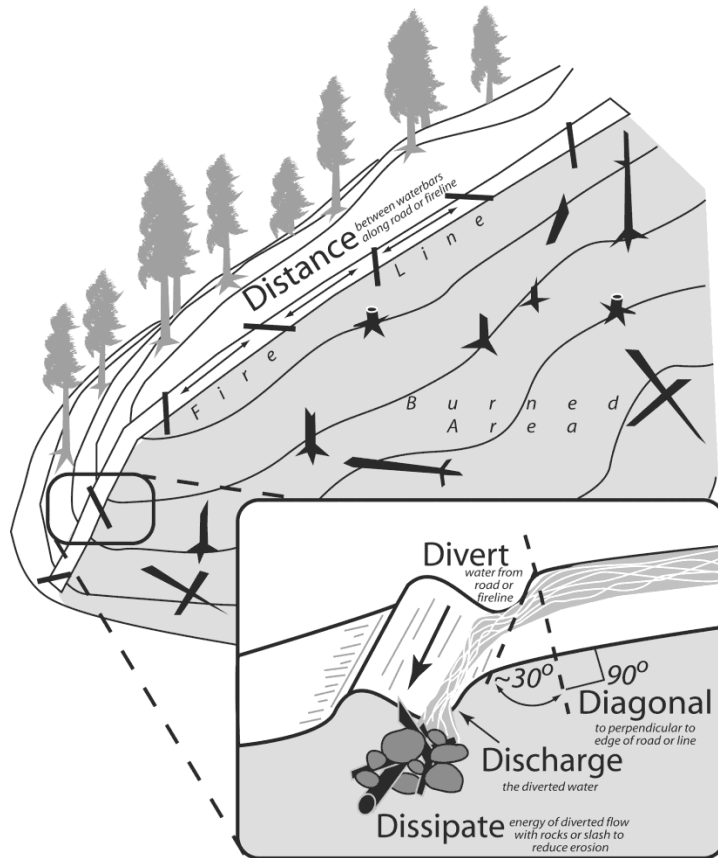


## APPENDIX D – GENERAL SUPPRESSION REPAIR PRESCRIPTIONS

### HANDLINES

- REAFS and FOBS should make sure to GPS interior and exterior firelines to ensure all fireline has been located.
- After the fire is out or when directed, obliterate all constructed firelines by pulling in the berm and scattering debris to at least 50% ground cover after subsoiling. If there isn't enough debris to achieve this, mulch with wood straw or weed-free straw. Work with a resource advisor to implement mulching.
- Block/Camouflage access points to hand lines to keep them from becoming future walking trails.
- Distribute concentrations of slash created during hand line rehabilitation. Utilize slash on disturbed soils in order to reduce erosion.
- Where rock outcrops, talus or scree slopes were used as natural barrier firelines, restore slope contour by raking slope material back into the fireline until flush.
- On Hand line that is heavily compacted where subsoiling has proved ineffective, place waterbars according to the following guidelines:
  - 1) Dig/Excavate in the waterbar – do not simply push up loose soil.
  - 2) Waterbars should direct runoff AWAY FROM the burned area where possible.
  - 3) Assure that the down slope end of the waterbar is open and has adequate length to allow free flow of water off the fire line.
  - 4) Logs can be incorporated into waterbars as long as they are embedded or anchored in a trench
  - 5) Place slash below outlets of waterbars in steep areas or areas that outlet flow may cause erosion. This will help slow runoff and help collect sediment.

Fire Line Slope %	Maximum Water Bar Spacing (feet)
2-5	300
6-10	200
11-15	150
16-20	100
21-35	75
36+	50



## DOZER LINES

- REAF and FOB's should make sure that to GPS interior and exterior firelines to ensure all fireline has been located.
- In order to discourage use and potential resource damage by Off Highway Vehicle's (OHV's) construct earthen berms and/or place boulders, heavy logs, slash and other large vegetative material at the beginning of dozer lines that are on non-system roads or trails closed to motorized travel.
- Place boulders, heavy down wood and debris to effectively prohibit motorized access on dozer or hand lines that are not access points for roads or trails. Take extra care to return the entry points to a natural appearance that blends in with the surrounding landscape to the extent possible.
- After the fire is out or when directed, obliterate all constructed firelines by pulling in the berm, subsoiling to a depth of 18-24" to cause full infiltration (excavator with a subsoiling excavator bucket is typically the best, most efficient tool for this work), and scattering debris to at least 50% ground cover after subsoiling. If there isn't enough debris to achieve this, mulch exposed soil with wood straw or weed-free straw. Work with a resource advisor to implement seeding where necessary. In some instances, berms will be smoothed out away from the line and debris will be scattered off of the line in order to preserve line function for future incidences. In these cases, the objective is to achieve hydrologic stability within the line while also making it unnecessary to have to reopen all of the line with heavy equipment. Resource Advisors will help identify these areas.

- Where rock outcrops, talus or scree slopes were used as natural barrier firelines, restore slope contour by raking slope material back into the fireline until flush.
- Avoid using rehabilitated firelines as travel corridors to reduce soil compaction.
- On Dozer line that is heavily compacted and where the soil type dictates that subsoiling will be ineffective, place waterbars according to the same specifications outlined in the handline section. Excavators are typically the best tool for accomplishing this work in an efficient manner.

## STUMPS

- In wilderness, or areas with specific prescriptions, utilize a plunge cut technique to encourage water retention and rot in order to make stumps appear natural. Do not cross hatch stumps.-
  - All stumps along Forest Service Road 19 shall be flush cut.
  - Stumps in all other areas should be cut to 12 inches or lower.

## ROAD REPAIR

- Clean brush and slash out of ditches on roads that were cleared and brushed.
- Dispose of brush by chipping, or hauling to disposal sites. Division REAF will identify disposal sites.
- Grade and shape all access and internal road systems that were used during fire operation, where appropriate. This includes the reshaping of water bars, drain dips, and ditch reconstruction.
- Identify the class of road used as fireline and work with a road specialist to return it to its previous condition.
- Work with READs to determine the need for additional drainage work.
- Road repair including drop points, spur roads and turnouts used for suppression activities will be addressed within the Repair spreadsheet and on the repair maps.
- Create barriers with boulders or heavy debris at entrances to roads that were closed prior to the fire to prevent motorized traffic.
- Damage to gates, culverts, drainage features (e.g. rolling dips, road cross ditching, and lead-off ditches) and signs from suppression operations will be repaired to the pre-fire condition.
- Damage to bridge running surfaces, bridge bumpers, object markers or damage from excessive loading per the READ load limit sheet will be repaired to pre-fire condition.
- Fall hazard trees that would reasonably hit main travel routes.

## CHIPPING

- No chipping into streams or along riparian zones- Place chips onto opposite side of road if possible OR end haul to a location identified by REAF/DIVS

- -Provide a 30 foot buffer of no chipping at any water crossing or culvert.
- -Do not place chips into any road ditch
- -Do not chip onto steep up slopes. Instead, haul chips away to an appropriate location.
- -Ensure that chips are no more than 4" deep.

## HELI-PADS

- Scatter and hide all trees, woody debris and brush cut during helispot construction.
- Cover and camouflage all bare soil created by construction of helispot with brush removed during construction.
- Apply repair methods identified in repair checklist to helicopter sling load sites, staging areas.
- Re-contour all areas within helispot to natural land contours.

## GROUND SUPPORT / STAGING AT STRUBE FLATS

- Restore Strube Flats by cleaning up all garbage and grading the roads.
- Treat new, and expanded, areas of non-native invasive plants introduced by fire suppression activities.

## TRAIL REPAIR

- If any trails were used as fireline, flush-cut or low-cut stumps at 45 degree angle facing away from the trail. Plunge cut twice into stumps to expedite rotting process. Do not hash cut stumps.
- Work with a technical specialist to install drainage features in trails as necessary to prevent erosion.
- Obliterate any short cuts between trail legs and any braided or parallel trail treads. If there are wide openings created for short cuts consider lateral mulching with cut brush and small trees.
- Obliterate any new non-system trails developed during fire suppression by restoring sidecast soil, installing drain dips to above standards, and dragging in cut brush or limbs.
- Scatter or drag away large piles of cut brush or trees from established system trails (up to 50 feet either side of trail). Blend in cut material with surrounding area.
- In areas where bucking occurred, attempt to distribute rounds in a manner that provides for an aesthetically pleasing appearance.

## RECREATION

- Pump all toilets used by fire personnel on FS Road 19 corridor and other areas. Those include
- All trailhead and campground access roads should be graded and shaped as needed. The trailheads include but are not limited to
- All stumps adjacent to roads and rec sites shall be low-stumped and angle cut away from the road to disguise cut ends. All small diameter stumps should be flush cut.
- Obliterate any new user created trails or fire line unless otherwise specified. Block/Camouflage access points to hand lines to keep them from becoming future trails.

- Haul out any logs or trees that are down or felled and not identified to remain at the site to a designated public use area.
- Remove cut brush or chip and spread, not to exceed 4 inch chip depth and avoid clogging water drains and outlets.
- Unwrap structures and be sure to remove all staples or tape.
- Follow agency guidelines for defining hazard trees and fell only those trees necessary to maintain a safe environment.
- Have crews pick up all litter including micro trash, flagging, signs and other materials from the fire area.
- Replace all signs and infrastructure damaged by suppression activities.

## SAFETY ZONES, DROP POINTS AND STAGING AREAS

- Pull berms back into area and re-contour.
- Scatter brush and debris back into area. Evaluate amount of material to be used prior to implementation so as not to create an additional fire hazard.
- Minimize compaction of soil by evaluating the need to rip area.
- Where available, place logs to discourage use by motorized vehicles.
- Where area was compacted, subsoil to a depth of 18" – 24" and scatter debris to at least 50% ground cover after subsoiling. If there isn't enough debris to achieve this, mulch exposed soil with wood straw or weed-free straw. Work with a resource advisor to implement mulching to achieve 50% ground cover.

## WATER SOURCES

- Remove any dams or dikes constructed in water sources during suppression activities.
- Any terraces created for pump placement should be re-graded to the natural slope.
- Clean any fuel spills associated with pump operations. Coordination with REAF resources if a visible sheen is detected in any water sources following a spill.
- Contain absorbent pads in plastic garbage bags and dispose of properly (if contaminated, special disposal procedures are required).
- Replace any barriers that were removed to access water sources.
- Rehab and naturalize any user routes (foot/wheel) accessing water sources that are associated with suppression tactics.
- Pull all newly constructed crossings and temporary materials away from stream channels. Ensure there is no material left that can plug culverts.
- Remove all man made materials used to construct diversions or impoundments.
- Disturbed areas at stream crossings or pump chances may be treated with rock, mulch or erosion control matting depending on the site conditions and degree of disturbance.
- Block access to stream channels from roads, trails, and campgrounds; use slash and make it appear natural.
- Do not clear large woody debris from stream channels.
- Do not disturb stream bottoms and streambanks.

## AREAS WITHIN ROBERT AUFDERHEIDE SCENIC BYWAY (FSR 19)

- Limb or fall trees only when they pose an eminent danger to people on the road or the road itself.
- If logs are not going to be removed, use directional falling so trees will lay in a natural (wind fall) appearing arrangement.
- Limit visibility of freshly cut stumps by cutting stumps angled away from the road or flush cut and rub soil.
- Avoid straight cuts on down logs by cutting logs at a 45-60 % angle.
- Do not throw rounds into creek.
- Minimize small cuts on logs when mopping up and roll sections back together so the log looks more natural.
- Remove all wood that impedes or threatens the integrity of the 19 road. This wood will be sorted into three categories: Aquatic Restoration Logs, Merchantable Timber, and Firewood.
- No logs should be removed from the river side of the 19 road unless they impede the maintenance of the road.

## AREAS IN THE WILDERNESS

### *General Actions*

- Remove all garbage (do not burn or bury), litter, and flagging from firelines, helispots, spike camps, etc.

### *Constructed Firelines*

- Construct waterbars with the guidelines on page 14:
  - Spacing should be somewhat irregular as to appear natural.
  - May be constructed of logs or rock or combination of both.
  - Angle should be 20-45 degrees to the orientation of the line. Waterbars should be placed in a way that drains water away from the fireline. Waterbars should “daylight”(The outlet should be clear of debris)
- After waterbars are constructed, pull berms in fire, smooth line to natural level of terrain and scatter duff, branches, and small logs in a natural arrangement.
- If cup trenches or deep fire lines exist, place logs lengthwise in trench and pull berms over them. This is to hide saw cuts and add organic matter to the soil.
  - Logs should be natural in appearance (avoid using logs with cut ends)
  - Minimum of 6” in diameter
  - Can have branches attached (top side only)
  - Should be 6 feet or longer (shorter logs should have rocks placed on downhill side).
  - Runout ditches should be open and should direct water outside of fire line.
  - Scatter concentrations of wood and bone yards to appear similar to surrounding area.
  - Roll cut logs back into place to give a more natural appearance.
  - Flush cut stumps within 4 inches of ground at same angle as the slope and cover with soil, woody debris, or make shallow bar tip cuts with saw or chop with a Pulaski, within site distance.

- If fireline intersects with system trail, follow guidelines under Trail Repair.

### *Stream Channels/ Water Chances or Lakes*

- At lakes used for pumping or dipping, replace down woody material that was removed.
- Remove any dams or dikes constructed for suppression activities.
- Any terraces created for pump placement should be re-graded to the natural slope.
- Clean any fuel spills associated with pump operations. Utilize contracted fuel spill clean-up specialists in coordination with REAF resources.
- Contain absorbent pads in plastic garbage bags.

### *Spike Camps*

- Remove all garbage (do not burn or bury), food scraps, and other trash
- Dismantle all fire rings created and place rocks to appear natural.
- Coals, burned logs, and ash should be cold and scattered to appear natural.
- Natural materials should be placed to restore camp area to a natural appearance (no evidence of tent pads).
- Fill and Rehab all slit trenches that were used for latrines.
- Police area for human waste not properly disposed of and bury at least 6 inches deep.

### *User Created and System Trails Modified by Suppression Efforts*

- Scatter limbs, branches, and duff into user created trails from spike camps to give a natural appearance.
- Trails on steeper slopes should have debris placed to minimize erosion.
- Restore system trails as shown in illustration.
- Within site distance of a system trail, cover or disguise cut stumps, disguise or disperse shorter bucked log segments.
- Buck snags or designated hazard trees leaning across system trails as follows:
  - Flush cut stumps and groove the top of the stump with tip of chains saw bar. Place dirt into the cut and on the face of the log to encourage rot.
  - Buck logs spanning the trail with an angle cut at a point 4 feet from centerline on both sides

### *Sling Sites, Medi-vac Sites, and Safety Zones*

- Scatter limbs, branches, and duff into user created trails and openings at these sites to give a natural appearance.
- Within the disturbance zone of these created openings, disperse shorter bucked log segments, and apply the stump guidelines.

## REVEGETATION GUIDELINES

In some instances there is a need to utilize native plants to revegetate areas that are very steep, highly erosive, susceptible to invasive plant species colonization, have higher aesthetic standards and require vegetation for screening avoidance areas. Most revegetation is accomplished through seeding and mulching of native grass species that the local district has on hand at the current time. In some specific areas there is a need to follow up grass seeding with tree, shrub and forb augmentation to ensure the ecosystem can recover in a reasonable amount of time. Blading with dozers can cause long term damage to soil biota so it is important to assist the recovery of highly sensitive areas. Resource Advisors and technical specialists will assist with identification of opportunities and areas to utilize seeding as an effective repair action. Seed is available at McKenzie River Ranger District.

## SOIL STABILIZATION

Straw and wood chips will be used where necessary to help ensure soil stabilization, reducing erosion damage.

## CULTURAL RESOURCES

Refer to list of cultural repair specifications provided by Resource Advisors to protect cultural site integrity.



## **APPENDIX E – REPAIR PLAN MAPS**

### REPAIR PLAN MAPS

Repair actions are tracked in Arc Collector. Below are the current maps.





## APPENDIX F – COMPLETED REPAIR WORK

### COMPLETED REPAIR WORK

The table below is a comprehensive list of items completed by the XXXX IMT and the Willamette XXXX IMT. **Items in red remain to be competed:**

**TableXX. Estimated costs and equipment needs for the repair of containment and suppression features in Division D**

**TableXX. Estimated costs and equipment needs for the repair of containment and suppression features in Division A**

**TableXX. Estimated costs and equipment needs for the repair of containment and suppression features in Division Z**

**TableXX. Estimated costs and equipment needs for the repair of containment and suppression features in Division P**

X

## APPENDIX G – RESOURCE SUMMARY / FIRE SUPPRESSION BEST PRACTICES

The Terwilliger Fire and suppression activities put resources at risk. The following areas of concern and mitigation measures were identified:

### *Aquatics/Fisheries – Kate Meyer*

- Critical Habitat for Bull Trout and Salmon species in several key watersheds. Class 1 streams with ESA threatened anadromous fish are located within the fire suppression perimeter in the South Fork McKenzie River, mainstem McKenzie River, Horse Creek, and numerous tributaries to these main channels. Use screen pumps (max opening 3/32nds with no greater than 0.33 ft/sec velocity 3” from the screen face) to limit sucking up, or trauma to, juvenile fish. Avoid drafting out of the Roaring River.
- No more than 10% of instantaneous surface flow should be removed from any stream providing habitat to ESA listed species. No more than 50% of the instantaneous surface flow should be removed from tributaries of ESA listed streams.
- Spring chinook salmon are currently moving to spawning grounds and may be present and/or spawning in streams where suppression activities are occurring. Minimize activities that may disrupt spawning activities or result in injury to spring Chinook or their redds. Some examples of disturbing/harmful activities include: blasting to remove hazard trees, heavy equipment crossing streams, tree felling into streams, fuel spills, pump intakes, etc...
- Minimize dozer line near streams to reduce the potential of sediment entering the stream network. Utilize hand lines whenever possible when working through riparian areas.
- Utilize pre-approved dip sites for helicopter bucket work when feasible. Resource advisors can reference the “dip YES” maps for approved waterbodies and can identify sites with known resource concerns.
- Utilize the “retardant YES” maps for pre-approved retardant drop locations. No retardant shall be dropped within the avoidance zones unless there is a threat to life.

### *Water quality – Nick Grant*

- McKenzie River is the drinking water source for the city of Eugene. If possible, limit the construction of dozer line within 180 feet of tributaries draining toward the McKenzie River.

### *Cultural Resources – Cara Kelly*

- Cultural sites are in the fire suppression perimeter. Cultural specialists should be employed during the incident to help identify avoidance areas and complete site monitoring.
- Work with a cultural specialists to protect cultural resources during mop up. The preference is to use IR and patrols rather than mopping up fire areas that contain known cultural resources. Known sites in areas to be mopped up should be flagged by a cultural specialist and avoided.
- Multiple historic lookouts, outbuildings, and shelters exist in the fire area. Key lookouts and shelters in the area include the Indian Ridge Look out and the Olallie Mountain look out. Please protect these structures with brush reduction and structure wrap if it is safe to do so.

### *Timber Resources and Sale Area- James Rudisill*

A timber READ should coordinate with the Road Engineers and Forest Management for existing staging areas or existing helicopter landings. Use of existing landings or openings for staging areas is preferred over creating new landings. Forest Management will have maps of current timber sales and future management planning areas to protect values at risk.

#### **Merchantable Logs:**

- Log lengths (please maximize the length of log whenever possible):
  - o 41 feet – Most preferred length
  - o 37 feet
  - o 27 feet
  - o 18 feet – Least preferred length
- Minimum diameter is 7 inches.
- Process to a 6 inch top.
- Process unburnt trees on the unburnt side of the fireline.
- Process burnt trees on the burnt side of the fireline.

#### **Fish Logs:**

- Highly defective logs, logs with significant amounts of char and all hardwoods will be sorted for fish logs or firewood.
- Process to 50 foot log lengths whenever possible. Minimum length of 40 feet.

- No top diameter limit.
- Minimum diameter is 20 inches.

**Log Decks:**

- Deck unburnt trees on the unburnt side of the fireline.
- Deck burnt trees on the burnt side of the fireline.
- Deck fish logs separately.
- Deck Firewood separately.
- Keep processed slash out of decks and off roads.
- Minimize decking area as much as practicable. Utilize existing openings if possible. Decking logs in ditch lines is acceptable.
- Deck as many logs as practicable in one deck without blocking the road.
- Keep in mind that a self-loading log truck will be loading and hauling the logs so place logs within reach of road ways.

*Wildlife – Penny Harris/Ruby Seitz*

- Threatened Northern Spotted Owl sites are in the vicinity.
- Peregrine falcon nest sites are in the vicinity.
- Limit helicopter flights over, potential noise and physical disturbances to nest sites.
- If possible, avoid nest sites during line construction. Additionally, if sites are on the fire side of a burn out, try to apply firing operations, where effective, that utilize ground fire through the nest sites.
- Oregon Spotted Frogs are found in the high elevation latkes. Please use the dip yes map and avoid dipping in Oregon Spotted Frog habitat.

*Invasive Species – Krista Ferris/Jenny Lippett*

- Utilize weed wash station at ICP and Spike Camp to limit transfer of non-native invasive species from other areas to McKenzie River RD or from MRRD to other parts of the country. All new resources must wash at check in and all demobed resources must wash at check-out
- Helicopter buckets are washed with a hot wash before and after they change fires and any time the buckets are used in a new lake. Avoid dipping in two lakes with the same bucket until it is washed.

- If possible, avoid locating staging areas, drop points, constructed safety zones and Helispots in areas infested with noxious weeds.

### *Recreation – Jonathan Erickson*

- If possible, maintain the visual character of Aufderheide Scenic Byway (Forest Service Road 19) through the Rebel fire area.
- Protect trails within the fire perimeter. Though it is desirable to avoid using trails as fire lines, this often needs to be balanced with the resource impacts of creating parallel fire lines. If trails are to be used for fire line, it is best if they can be brushed to the clearing limits associated with the trails. Typical clearing limits for trails are removing brush through the trail corridor at a width of 96" (8') and a height of 10'. If work is done outside of these parameters or crews will need to do any digging, involve a line qualified trail specialists during fireline construction. Trails are identified on the McKenzie River Ranger District Map. The trail event layer is identified on the IAP map.
- Maintain public safety by keeping people out of the closure area.
- Maintain Wilderness Character by allowing fire in wilderness to burn naturally and utilizing firelines outside of wilderness where possible.
  - Communicate with the MRRD special uses program manager to alert any special use permit holders of fire spread that may affect their operations.
  - Communicate with the Developed Recreation program manager of any changes in fire spread that may affect concessionaire run developed recreation sites or Forest Service operated concessionaire operated sites.







COMPLETED SITE SPECIFIC REPAIR WORK